

PREFACE

The *Bureau of Design and Environment Manual* has been prepared to provide uniform practices for the Department and consultant personnel preparing Phase I studies and reports and contract plans for Department projects. The *Manual* presents most of the information normally required in the development of a typical roadway project. The designer should attempt to meet all criteria and practices presented in the *Manual*; however, the *Manual* should not be considered a standard that must be met regardless of impacts. The designer should develop roadway designs that meet the Department's operational and safety requirements while preserving the aesthetic, historic, or cultural resources of an area. Designers must exercise good judgment on individual projects and, frequently, they must be innovative in their approach to roadway design. This may require, for example, additional research into the highway literature.

The *Bureau of Design and Environment Manual* was developed by the Policy and Procedures Section within the Bureau of Design and Environment with assistance from the engineering consulting firm of Roy Jorgensen Associates, Inc.



Illinois Department of Transportation Departmental Policies

D&E-1
March 1, 2001

BUREAU OF DESIGN AND ENVIRONMENT MANUAL

1. POLICY.

The Bureau of Design and Environment shall publish and maintain a manual which establishes uniform policies and procedures for the location, design, and environmental evaluation of highway construction and reconstruction type projects on the State Highway System. The title of the Manual will be the *Bureau of Design and Environment Manual* (BDE Manual).

2. PURPOSE.

The purpose of this Policy is to compile the policies and procedures which govern project location, design, and environmental evaluation into one comprehensive manual.

3. GUIDELINES FOR IMPLEMENTATION.

The policies and procedures contained in the *BDE Manual* are effective on the date they are transmitted to Manual holders unless otherwise noted in the transmittal memorandum. The *BDE Manual* is intended to apply primarily to the State Highway System. The *BDE Manual* provides detailed requirements on such subjects as:

- a. Administration and Procedures
- b. Project Development
- c. Environmental Procedures
- d. Roadway Design Elements
- e. Design of Highway Types
- f. Other Highway Design Elements
- g. Plans and Contracts
- h. Procedure Memoranda

March 1, 2001

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4. RESPONSIBILITIES.

The Bureau of Design and Environment is responsible for preparing and maintaining this Policy and the associated BDE Manual. All projects on the State Highway System developed by the District Offices or other agencies shall be in compliance with this Policy and the *BDE Manual*.

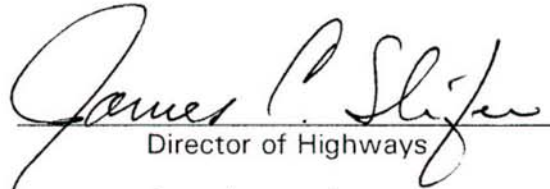
5. ACCESSIBILITY.

Copies of this Policy may be obtained from the Bureau of Design and Environment in the Harry R. Hanley Building. This Policy and the associated BDE Manual may be examined in the Hanley Building Library and in each of the nine District Highway Offices. The *BDE Manual* is available on CD and may be obtained from the Bureau of Highways Administration in the Hanley Building.

CLOSING NOTICE.

Supersedes: Departmental Policy LEN-1, Policy on the *Bureau of Location and Environment Manual*; and Departmental Policy DES-1, *Design Manual*.

Approved:


Director of Highways
March 23, 2001
Date

MANUAL FORMAT/UPDATE

The *Bureau of Design and Environment Manual* is intended to provide current design and environment policies and procedures for use in developing State highway projects. To ensure that the *Manual* remains up to date and appropriately reflects changes in IDOT's needs and applicable requirements, its contents will be updated on an ongoing basis.

BDE will be responsible for evaluating changes in the highway design and environmental literature (e.g., the issuance of new research publications, revisions to Federal regulations) and will ensure that those changes are appropriately addressed through the issuance of revisions to the manual. In addition, it is important that users of the *Manual* inform BDE of any inconsistencies, errors, need for clarification, or new ideas to support the goal of providing the best and most up-to-date information practical. We have provided a form entitled BDE Manual Comments and/or Corrections (see page vii) for use in submitting any comments and/or suggestions.

CD-ROM has been selected as the primary format for distribution of the *Manual*. At regular intervals, a new edition of the entire manual will be issued via an updated CD-ROM. The upper right-hand corner of each page will indicate the latest issuance date for that page. As changes in policies, procedures, directives, and/or criteria occur between the issuance dates for new editions of the *Manual*, these changes will be distributed via BDE Procedure Memoranda. The user should retain and refer to these interim memoranda when using the *Manual* until such time as they are superseded or incorporated into an updated edition of the *Manual*. BDE Information Memoranda will be used to distribute items of information that are of interest and are related to topics covered in the *Manual* but that are not a part of the framework of IDOT policies and procedures for project development.

This 2002 Edition of the *Bureau of Design and Environment Manual*, dated December 2002, replaces the 2000 Edition of the *Manual*, dated November 1999. This edition contains numerous minor changes and corrections and has been revised throughout to incorporate both US Customary and metric measurements. Revisions were made in accordance with the 2001 AASHTO *A Policy on Geometric Design of Highways and Streets* (Green Book). It also incorporates a number of other noteworthy revisions as reflected in the list below. Changes for the switch to dual units are not specifically marked. Vertical lines in the page margins denote all other revisions.

Chapter 5 – Raised the District Engineer's signature authority from \$50K to \$250K (5-1.02) and provided examples of Local Agency Agreements (5-8).

Chapter 8 – Revised to reflect current methods of compensation (direct labor multiple) (8-3.03(a)) and clarified Damage due to Consultant Errors and/or Omissions (8-5.01).

Chapter 12 – IDOT operates under a Project Oversight Agreement not Certification Acceptance procedures (12-5). SMART Policy Guidelines revised.

Chapter 13 – Discussion regarding the use of crossovers added. Updated to reflect requirement of the District to coordinate with the Office of Public Affairs for all major construction/reconstruction projects, and also notify the Office of Public Affairs one week prior to any detours or road closures.

Chapter 14 – Data required for Intersection Design Studies and the plan sheet format revised.

Chapter 22 – Metric use policy updated (22-2.02), validity of IDNR sign-off clarified (22-5.05(c)), BDE PM 19-00 incorporated (22-4).

Chapter 23 – BDE PM 22-01 incorporated (23-1.05(d), 23-2.02(d), and 23-4.02), reference to incidental taking authorization added (23-2.02(h)), guidance on groundwater resources/quality revised (23-2.02(i)).

Chapter 24 – BDE authority to sign cover sheet clarified (24-3.03), BDE PM 21-01 incorporated (24-3.05), BDE PM 22-01 incorporated (24-3.06), reference to incidental taking authorization added (24-3.07(h)), guidance on groundwater resources/quality revised (24-3.07(i)).

Chapter 25 – BDE authority to sign cover sheet clarified (25-3.04), BDE PM 21-01 incorporated (25-3.07(d)), BDE PM 22-01 incorporated (25-3.08), reference to incidental taking authorization added (25-3.09(h)), guidance on groundwater resources/quality revised (25-3.09(i)).

Chapter 26 – Approval dates for Programmatic 4(f)s clarified (26-2.06), BDE PM 18-00 incorporated (26-6), applicability of IDNR pre-screening clarified (26-9.06(b)), Federal “farmland” definition updated (26-10.04(a)).

Chapter 27 – Access to ESR forms clarified (27-1.03, 27-2.01), timing of PSI reports clarified (27-2.03(a)).

Chapter 28 – BDE PM 25-01 incorporated (28-2, 39-3.03(c), 59-8.02).

Chapter 31 – BDE PM 7-00 incorporated (31-7). Revised to reflect changes made with the 2001 AASHTO *Green Book*, in particular the height of eye and object for stopping sight distance.

Chapter 32 – Updated to reflect the changes made with the 2001 AASHTO *Green Book*. Superelevation development for multilane highways modified.

Chapter 33 – Updated to reflect the changes made with the 2001 AASHTO *Green Book*.

Chapter 34 – Rumble strip policy updated to reflect changes made with the new standard.

Chapter 36 – Updated to reflect the changes made with the 2001 AASHTO *Green Book*.

Chapter 37 – BDE PM 20-00 incorporated (37-1.03). Additional requirements by the current FHWA Administrator incorporated.

Chapter 38 – Updated to comply with NCHRP 350 and with the 2002 AASHTO *Roadside Design Guide*.

Chapter 39 – BDE PM 25-01 incorporated (39-3.03). Vertical clearance for new construction bridges on Interstates increased to 16 ft 9 in. Clarification provided regarding definition of reconstruction of structures.

Chapter 40 – BDE PM 13-00 incorporated (40-3.07).

Chapter 44 – Increased vertical clearance required for new construction of Interstates to 16 ft 9 in.

Chapter 49 – Revised criteria for improved bridges on unmarked routes on the State Highway System.

Chapter 53 – Revised to reflect changes in policy on resurfacing and addition of Superpave design guidelines. BDE PM 11-00 incorporated (53-4.05(a) and 53-4.08(c)). BDE PM 12-00 incorporated (53-4.08(e)). BDE PM 29-02 incorporated (53-4.05(a), (b), (c) & (d)).

Chapter 54 – BDE PM 10-00 incorporated (54-2.01(f)). BDE PM 11-00 incorporated (54-5.01(c) and 54-5.01(h)(7)(g)). Revised minimum design traffic criteria for freeway ramps (Figure 54-1B), rest areas (54-1.07), and weigh stations (54-1.08).

Chapter 56 – The Electrical and Mechanical Unit in the Bureau of Design and Environment, will review all District electrical/light designs, including those prepared by a consultant. District 1 is the exception. All lighting projects submitted for review will consider both luminance and illuminance design.

Chapter 58 – BDE PM 3-00 and Markers (5-125) from the original *Design Manual* were combined into a new Section 58-8, Survey Markers and Monuments and BDE PM 4-00 added for a new Section 58-7 Sealing of Abandoned Water Wells.

Chapter 59 – BDE PM 14-00 added for a new section 59-7.15. BDE PM 25-01 incorporated (59-8.02 and 59-8.04). Design guidelines added throughout.

Chapter 64 – BDE PM 24-02 incorporated (64-2.04(a)).



Position: _____

Telephone Number: _____ **E-Mail Address:** _____

(PLEASE PROVIDE ANY BACKGROUND OR REFERENCES USED)

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Send to:
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2300 South Dirksen Parkway – Room 330
Springfield, Illinois 62764
Attn: Bureau of Design & Environment
Policy & Procedures Section

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Signature Sheet

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